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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,218	08/01/2001	Matthias Kloppmann	DE920000018US1	5313
25259	7590	06/15/2005	EXAMINER	
IBM CORPORATION 3039 CORNWALLIS RD. DEPT. T81 / B503, PO BOX 12195 REASEARCH TRIANGLE PARK, NC 27709			VU, TUAN A	
			ART UNIT	PAPER NUMBER
			2193	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/920,218

Applicant(s)

KLOPPMANN ET AL.

Examiner

Tuan A. Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This action is responsive to the application filed August 1, 2001.

Claims 1-21 have been submitted for examination.

Claims Objections

2. Claim 5 is objected because of the following informalities: the acronyms (like FDL, WPD, SLANG) used in the claim are to be spelled out at least once.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, and 11 recite the limitation "the stored procedure information" in lines 12 of both claims. There is insufficient antecedent basis for this limitation in the claim. Examiner will interpret this, inter alia, as transformed information to run the procedure.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 1-3, 11, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Goodwin et al, USPN: 6,199,195 (hereinafter Goodwin).

As per claim 1, Goodwin discloses a method for developing process-based applications, in particular workflow-based applications, using a development environment for the process-based applications hosted by a process management system (e.g. *business logic, unified models* – col. 16, line 65 to col. 17, line 27 – Note: unified models and business logic read on work flow and process based applications), the process-based applications being based on at least one process model containing at least one procedure hosted by an execution environment and represented by metadata, said method comprising the steps of:

accessing the metadata for at least one procedure (e.g. *Schema server 314, 316* – Fig. 3; col. 10, lines 8-12; col. 11, lines 17-54);

extracting, from the accessed metadata, information needed to run the procedure (e.g. *describing classes* - col. 11 line 66 to col. 12, line 1; *software classes maintained by developers* - col.12, lines 54-57);

transforming the extracted information into a format appropriate for the development environment for the process-based applications (e.g. *templates, template parser* – col. 13, lines 20-56 ; Fig. 6; col. 14, line 61 to col. 15, line 5 – Note: using templates and associated language parser for gathering and checking class information converted from IDL or from a model name reads on format transforming for process-based application);

transferring the transformed information to the development environment; and building the application based on the at least one procedure based on the transferred information (e.g.

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Fig. 5-6) by moving the stored procedure information to the process management system (e.g col. 13, line 63 to col. 14, line 9).

As per claim 2, Goodwin discloses signatures for the at least one stored procedure stored in a database catalog and topology information stored in a database directory (*describing classes* - col. 11 line 66 to col. 12, line 1; *describe object classes* – col.11, lines 26-35 - MOF, and meta data reads on skeleton or topology of class definitions)

As per claim 3, Goodwin discloses extracting step accomplished by using at least one Simple Query Language (SQL) statement (Fig. 7).

As per claim 11, Goodwin discloses a method for automatically retrieving information about stored procedures contained in a network environment and to be used in a development environment for use in a process management system wherein the procedures are hosted by at least one database management system (Fig. 1-3), said method comprising the steps of:

- accessing metadata for at least one of the stored procedures;
- extracting, from the accessed metadata, information needed to run the procedure;
- transforming the extracted information into a format appropriate for the development environment for process-based applications;
- transferring the transformed information to the development environment; building an application based on the at least one procedure based on the transferred information; and
- moving the stored procedure information to the process management system.

All these steps are addressed in claim 1 above (re claim 1 for corresponding rejections).

As per claim 15, this claim is a means claim of claim 11, hence is rejected with the corresponding rejection as set forth therein.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4, 6-10, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwin et al, USPN: 6,199,195, and further in view of Baker et al., "Meta Object Facilities and their Role in Distributed Information Management Systems", paper 1997, *The Centre for Complex Co-Operative Systems Faculty for Computer Studies & Mathematics*, CERN, Geneva; URL: <http://www.aps.anl.gov/conferences/icalepcs/97/paper97/p076.pdf> (hereinafter Baker)

As per claim 4, Goodwin does not explicitly disclose that the process management system is a *workflow management system* and wherein the development environment is part of the workflow management system but discloses framework using modeling tool for layout business activities and logic (e.g. col. 10, line 54 to col .11, line 17; Fig. 3; *business logic, unified models* – col. 16, line 65 to col. 27; Background& Summary of invention); hence the framework for complex applications using UML or Rationale Rose (including user and roles) type of modeling for implementing a business application logic is strongly indicative of a form of workflow management system. Using the same modeling tool analogous to Goodwin is the method by Baker, teaching using it in a work flow management system (see Ch. 5-6). In case the framework by Baker is not a workflow management system, it would have been obvious for one of ordinary skill in the art at the time the invention was made to enhance Goodwin's system so that it has the workflow approach using the same tool concepts (MOF, UML, database query,

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object meta data) so that the distributed aspect of framework as taught by Baker can take into consideration the interaction between human and machine activities suggested via the Unified modeling tool which are addressed in a workflow management system as taught by Baker (see chapter 5 top para).

As per claim 6, Goodwin discloses a method for building process-based applications, in particular workflow-based applications, using a development environment for process-based applications, the process-based applications being based on at least one process model containing at least one process step, in particular at least one activity hosted by a process management system (e.g. col. 10, line 54 to col.11, line 17; Fig. 3; *business logic, unified models* – col. 16, line 65 to col. 17, line 27), where at least one of the process steps is to be implemented by at least one stored procedure, said method comprising the steps of:

accessing metadata for the at least one process step in the development environment (Fig. 3; col. 10, lines 8-12; col. 11, lines 17-54);

extracting, from the accessed metadata, information needed to derive required definitional data for at least one procedure to be stored (e.g. *templates, template parser* – col. 13, lines 20-56 ; Fig. 6; col. 14, line 61 to col. 15, line 5);

transforming the extracted information into definitional data for the at least one procedure to be stored; and creating stored procedure definitions (Fig. 5-6; col. 13, line 63 to col. 14, line 9 – Note: using class definitions from IDL and MOF files to create instance of object classes reads on defining procedures in application memory) based on the definitional data.

But Goodwin does not specify a process-based application being a particular a workflow management system. However, this limitation would have been obvious as set forth above.

As per claim 7, Goodwin discloses generating at least skeleton information for the at least one stored procedure in a database hosted by a database management system by using the stored procedure definitions (e.g. *describing classes* - col. 11 line 66 to col. 12, line 1; *software classes maintained by developers* - col.12, lines 54-57 – Note: MOF, and meta data reads on skeleton of class definitions).

As per claim 8, Goodwin discloses generating a frame of code for the at least one stored procedure (e.g. Fig. 5-6 – Note: IDL being used to assemble class being used for the template reads on frame of code being generated via a meta language).

As per claim 9, Goodwin discloses storing of stored procedure definitions into a metadata store hosted by a database management system (*Schema server 314, 316* – Fig. 3; col. 10, lines 8-12; col. 11, lines 17-54) hence has disclosed inserting definitions therein.

As per claim 10, Goodwin does not explicitly disclose extracting required definitional data is at least signature information for each stored procedure contained in the metadata store, or at least topology information required to locate stored procedures contained in the metadata store hosted by the database management system; but based on the purpose of the MOF database (Fig. 5-6; col. 11, lines 26-35) the limitation is disclosed, and the topology of information in a MOF tree is described via a IDL.

As per claim 17, this claim is a means claim of claim 6, hence is rejected with the corresponding rejection as set forth therein.

9. Claims 5, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwin et al, USPN: 6,199,195, and Baker et al., “Meta Object Facilities and their Role in Distributed Information Management Systems”, 1997; and further in view of Muehlen et al.,

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“Workflow Process Definition Language- Development and Directions of a Meta-Language for WorkFlow Process”, September 1999. Proceedings of the 1st KnowTech Forum (hereinafter Muehlen).

As per claim 5, Goodwin combined with Baker does not disclose transforming the extracted information being accomplished by reformatting the extracted information into a suitable workflow definition interchange format file, in particular an FDL or WPD or SLANG format file, and wherein said step of transferring the transformed information is accomplished by transferring the suitable workflow definition interchange format file to the workflow management system. But the use of a language to describe a model, like a model language as Goodwin’s IDL or Baker’s IDL can be implemented in a workflow specific language achieving a similar effect. At the time the invention was made, the use of definition language of such category called meta-language to describe model elements interaction and modeling of workflow in a workflow management system (WMS) as in Baker was known concept; and Muehlen discloses a language such as WPD (ch. 2.1) to achieve this meta-language describing Baker’s WMS. And it would have been obvious for one of ordinary skill in the art at the time the invention was made to enhance the modeling language by Goodwin so that an appropriate meta-language like WPD by Muehlen be used in the context of a WMS as set forth above, and the motivation is to have a appropriate language for a specific modeling system like a WMS as taught by both Baker and Muehlen so to enable data translation from a WMS model entities to a neutral form that can be interpreted as shown by Muehlen (ch. 2.1).

As per claim 16, Goodwin does not specify Workflow Management System per se; but this has been rendered obvious according to the rationale using Baker. But Baker and Goodwin

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do not explicitly teach a WPDL, hence this limitation about Workflow Definition interchange Format. This WPDL file falls under the ambit of the WPDL by Muehlen as put forth in claim 5, hence is rejected with the rationale as set forth therein.

10. Claims 12-14, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goodwin et al, USPN: 6,199,195; and further in view of Souder et al., USPN: 5,724,556 (hereinafter Souder).

As per claim 12, Goodwin discloses a database but does not specify whenever a change in the metadata describing the stored procedures occurs, synchronizing the metadata describing the stored procedures in the DBMS with the information in the development environment. The management internal to maintaining changes in a database was a well-known concept, and whether or not Goodwin discloses maintenance such as to update or synchronize modified records in the database, this synchronizing of data would have been obvious. Souder discloses updating of persisted data related to building application program modules to make them in sync for distributed reuse (col. 18, line 40 to col. 19, line 4). Since Goodwin also maintains a database of metadata being distributed for application developing similar to Souder, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the database management of managed objects by Goodwin to have update and synchronization of records therein like in Souder, because data not being synchronize can generate conflicts when accessed asynchronously by distributed users as put forth by Souder.

As per claim 13, using the rationale from claim 12, the combined teachings by Goodwin and Souder in light of known concept of maintaining database records, the limitation as to performing synchronization having replication features of the database management system to

provide information about changes in the stored procedures to the development environment for process-based applications would also have been obvious.

As per claim 14, in light of database management well-known concepts and in view of the rationale of claim 12 and the integral need of update any database, Goodwin and Souter (see Fig. 3-5, 14 – Note: Create, Read, Update, Delete reads on operations for adjusting data in view of a needed change to a table or record item) by virtue of obviousness further teach the steps of: determining whether a stored procedure has been added, modified or discarded; if it is determined in said determining step that a stored procedure has been added, modified or discarded, retrieving information about the stored procedures within the environment; reformatting the retrieved information into a format read appropriate for the development environment for process-based applications; transferring the reformatted information to the development environment; and updating the development environment with the reformatted information; because one skill in the art would be motivated upon changing a metadata file or a piece of IDL code as by Goodwin to restore it back into its DB table using the techniques of synchronization or duplication as mentioned above in claims 12-13.

As per claim 18, Goodwin discloses a information retrieving system for retrieving information about stored procedures contained in a network environment and to be used by a process management system, wherein the procedures are hosted by at least one database management system, comprising:

means for determining whether a stored procedure is available for conversion (Fig. 5-6)

means for reformatting the retrieved information into format read appropriate for the process management system (*templates, template parser* – col. 13, lines 20-56 ; Fig. 6; col. 14, line 61 to col. 15, line 5);

means for transferring the reformatted information to the process management system; and means for updating the process management system with the reformatted information (e.g col. 13, line 63 to col. 14, line 9; Fig 5-6).

But Goodwin does not disclose means for retrieving if said procedure has been added, modified or discarded; reformatting said retrieved information, reformatting and transferring it for update in the process management system using the reformatted information. But the need to update and synchronize persisted metadata file in an interchange language as by Goodwin would necessitate the teachings by Souter; and in view of the rationale as set forth in claims 12-13, the above limitation would have been obvious lest the objects retrieved would result in application use of unsynchronized data leading to runtime conflicts as mentioned by Souter.

As per claim 19 Goodwin (combined with Souter) discloses means for accessing metadata for an added or modified procedure; and means for extracting, from the accessed metadata, information required by the process management system to run the stored procedure (*Schema server 314, 316* – Fig. 3; col. 10, lines 8-12; col. 11, lines 17-54; *describing classes* - col. 11 line 66 to col. 12, line 1; *software classes maintained by developers* - col.12, lines 54-57).

As per claim 20, refer to claim 14 for means for triggering said determining means to determine whether a stored procedure has been added, modified or discarded.

As per claim 21, Souter mentions conventional method for repeatedly executing said determining means after a predetermined time delay (col. 3, lines 11-38); hence a need is

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suggested to minimize conflicts using means to address conflicts as soon or often as possible (col 18, lines 40-62). Based on database maintenance as conventionally perceived, i.e. periodically synchronizing database records being a well-known concept at the time the invention was made, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a periodical database synchronization as mentioned by Souter to the database of Goodwin for the same reasons as set forth in claim 12-13 above.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)272-3719.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence – please consult Examiner before using) or 703-872-9306 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VAT
June 13, 2005



ANIL KHATRI
PRIMARY EXAMINER